



A.D. 1854 N^o 641.

S P E C I F I C A T I O N

OF

GEORGE HARMAN BARTH.

APPARATUS FOR ADMINISTERING GASES
FOR CURATIVE PURPOSES.

L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 7d.

1854.



A.D. 1854 N° 641.

**Apparatus for Administering Gases for Curative
Purposes.**

LETTERS PATENT to George Harman Barth, of 4, Mornington Crescent, Hampstead Road, in the County of Middlesex, Medical Galvanist, for the Invention of “**IMPROVEMENTS IN THE MODE OF SUPPLYING AND ADMINISTERING GASES FOR THE ALLEVIATION AND CURE OF CERTAIN DISEASES.**”

Sealed the 12th September 1854, and dated the 17th March 1854.

PROVISIONAL SPECIFICATION left by the said George Harman Barth at the Office of the Commissioners of Patents, with his Petition, on the 17th March 1854.

I, GEORGE HARMAN BARTH, of 4, Mornington Crescent, Hampstead Road,
5 in the County of Middlesex, Medical Galvanist, do hereby declare the nature of the said Invention for “**IMPROVEMENTS IN THE MODE OF SUPPLYING AND ADMINISTERING GASES FOR THE ALLEVIATION AND CURE OF CERTAIN DISEASES**” to be as follows :—

This Invention relates to a mode of supplying oxygen, protoxide of nitrogen,
10 and other gases diluted with air for the treatment of certain diseases, and to the apparatus or instruments for effecting the same. One mode of effecting this object is by employing a portable gasometer, having a core or solid cylinder inside, for the purpose of dispensing the atmospheric air previous to filling the gasometer for use. A scale is fitted to the gasometer for measuring the
15 contents of the same, and suitable stop cocks applied for regulating the supplying of the gasometer with gas, and also the passage of the gas therefrom to the inhaling tube. The inhaling tube consists of a flexible pipe fitted with

Barth's Improvements in Administering Gases for Curative Purposes.

a glass mouthpiece. Between the mouthpiece and the gasometer is a vessel containing two valves, one allowing the gas to be inhaled, and the other allowing it to escape into the room after having been respired. The gasometer is supplied from a strong wrought iron vessel, which may be placed under the pedestal or in the core or cylinder before mentioned. The gas is compressed 5 into this vessel by a force pump, and a sufficient quantity may be contained therein to supply the patient for a considerable period. When one vessel is empty another one ready filled may be connected with the gasometer. It is obvious that many different arrangements of apparatus may be employed in effecting these objects, the main feature of my Invention being the supplying 10 in a portable and compact form gases for medical use by compressing the same in strong chambers.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said George Harman Barth in the Great Seal Patent Office on the 16th September 1854.

15

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GEORGE HARMAN BARTH, of 4, Mornington Crescent, Hampstead Road, in the County of Middlesex, Medical Galvanist, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Seventeenth day of March, in the year of our Lord 20 One thousand eight hundred and fifty-four, in the seventeenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said George Harman Barth, Her special license that I, the said George Harman Barth, my executors, administrators, and assigns, or such others as I, the said George Harman Barth, my executors, administrators, or assigns, 25 should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for “**IMPROVE- 30 MENTS IN THE MODE OF SUPPLYING AND ADMINISTERING GASES FOR THE ALLEVIATION AND CURE OF CERTAIN DISEASES,**” upon the condition (amongst others) that I, the said George Harman Barth, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next 35 and immediately after the date of the said Letters Patent.

Barth's Improvements in Administering Gases for Curative Purposes.

NOW KNOW YE, that I, the said George Harman Barth, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawings, and to the
5 letters and figures marked thereon, that is to say :—

My said Invention relates to an apparatus for supplying condensed oxygen gas or other gases, and measuring and diluting them with common air in a form suitable for inhalation when required to be used for curative purposes. The object of supplying the gas in a condensed state is to render it more con-
10 veniently portable, and thus obviate the difficulty which otherwise exists in the conveyance of aeriform bodies from the place where they are prepared to the invalid's chamber where they are to be used. This forms a principal feature in my Invention.

Another feature in my Invention relates to the connecting and adapting a
15 vessel of condensed gas to a gasometer, in which any given portion of gas can be measured and mixed with air previously to being inhaled, and the concealing it in the case of the water vessel belonging to the gasometer. The gas is measured by means of a graduated scale engraved accurately upon the rod which guides the gas holder in its ascent, the scale being referred to a fixed
20 point independant of the gas holder; for instance, it may be attached to the water vessel. The gasometer is provided with a stop cock for the admission of air, as well as with another stop cock, to which is attached a flexible tube and mouthpiece of glass, or other suitable material, through which the mixture of gas and air is to be inhaled. And in order that my said Invention may be
25 properly understood I shall now proceed to describe the Figures on the Sheet of Drawings hereunto attached.

Figure 1 is a front elevation of the apparatus with the gas holder empty; Figure 2 is a plan of the same; Figure 3 is a sectional elevation arranged for use, showing the gas holder full of gas, and how the gas is conducted into the
30 gas holder; Figure 4 is a sectional plan of the apparatus, showing the vessel of compressed gas in its place, as well as the internal parts.

A is the water vessel or tank of the gas holder C. This tank is made with a hollow core or cylinder B, so as to avoid the use of much water, and afford a convenient place for the wrought iron bottle E; the tank A also supports a
35 bridge piece G, which steadies the guide rod F of the gas holder. The bridge piece G is made removable for the convenience of packing; the tank has handles, as shewn in the Drawings, to lift it off the mahogany stand D. The wrought iron bottle E has screwed into its side at the bottom a pipe, to which is fixed the stop cock N, whence a suitable tube proceeds to the top of the

Barth's Improvements in Administering Gases for Curative Purposes.

core of the tank, and there delivers its gas into the gas holder just above the water line; at P is a union joint for connecting the bottle E with the tube proceeding to the top of the core. The guide rod F is divided, so as to represent pints of capacity of the gas holder, and the proportions of gas and air are thereby easily mixed when required. The gas holder C has properly secured 5. to its top two air-tight cocks K & M. The cock K is to admit the quantity of air required to dilute the oxygen or other gas, and the cock M communicates with a flexible tube and glass mouthpiece indicated by the letter H. The mahogany stand D has fittings to place the bottle E in, and the tank and gas holder are fastened to it by turn buttons for the convenience of removal; the 10. stand D is also mounted on castors for the convenience of removal. The bottle E being charged with compressed gas, and the tank A properly filled with water, the mixing and inhaling of the gas by this apparatus is as follows:—The cock K is opened, and the gas holder C is gently drawn up by means of the ring at the top of the guide rod F until the gas holder is charged 15. with the quantity of air required for diluting the gas, as shewn by the division at the under side of the bridge piece G; the cock K is then shut and the stop cock N slightly opened, thus admitting to the gas holder a small quantity of gas out of the bottle E. When the graduated guide rod F shows that sufficient gas has been admitted the stop cock N is shut, and the apparatus is 20. ready for the patient to inhale. To inhale, the lungs are exhausted of air by making a strong expiration; the glass tube is then taken into the mouth, and the inhaling cock M is opened, and the lungs filled by inspiration with the gas from the gas holder. The cock is then shut, the mouth is removed from the glass tube, and an expiration is made; then the gas is inhaled as before, 25. and then exhaled, and so on alternately until the prescribed quantity has been consumed by the patient.

When the gas in the bottle E has been all used the gas holder and tank are taken off, as if in one piece, by moving the turn buttons from the plates and lifting it by the handles; the empty bottle is then removed by unscrewing the 30. union joint P, and a full one is put in its place. The gasometer may consist of a bag of flexible material, instead of the gas holder and tank, as herein-before described, so placed in a box or drawer connected with the vessel of condensed gas that a stop or pointer outside the box or drawer shall indicate, on a suitable scale, the amount of gas or air in the gasometer at any time, so 35. that the patient may measure and mix his proportion of gas and air in a manner analogous to that herein-before described for charging the gas holder with gas.

Having now described and particularly ascertained the nature of my said

Barth's Improvements in Administering Gases for Curative Purposes.

Invention, and the manner in which the same is or may be used or carried into effect, I would observe, in conclusion, that I do not confine or restrict myself to the precise details or arrangements which I have had occasion to describe or refer to, as many variations may be made therefrom without
5 deviating from the principles or main features of my said Invention. But what I consider to be novel and original, and therefore claim as the Invention secured to me by the herein-before in part recited Letters Patent, is,—

First, the general arrangement and construction of apparatus to be used for the supply of condensed gases for curative purposes, as herein-before
10 described.

Second, the supplying of gas to be used for curative purposes in a portable form by compression in a strong vessel.

Third, the attaching the vessel containing the condensed gas to any apparatus in which it can be measured and diluted, and from which it can be inhaled for
15 medical purposes.

Fourth, the system or mode of including the vessel containing the condensed gas in the core or cylinder of the tank of the gasometer.

Fifth, the application and use for medical inhalation of a bag of flexible material, instead of the gasometer herein-before described, in connexion with a
20 strong vessel to hold the condensed gas.

In witness whereof, I, the said George Harman Barth, have hereunto set my hand and seal, the Fifteenth day of September, One thousand eight hundred and fifty-four.

GEORGE HARMAN BARTH. (L.S.)

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.

Fig. 1.

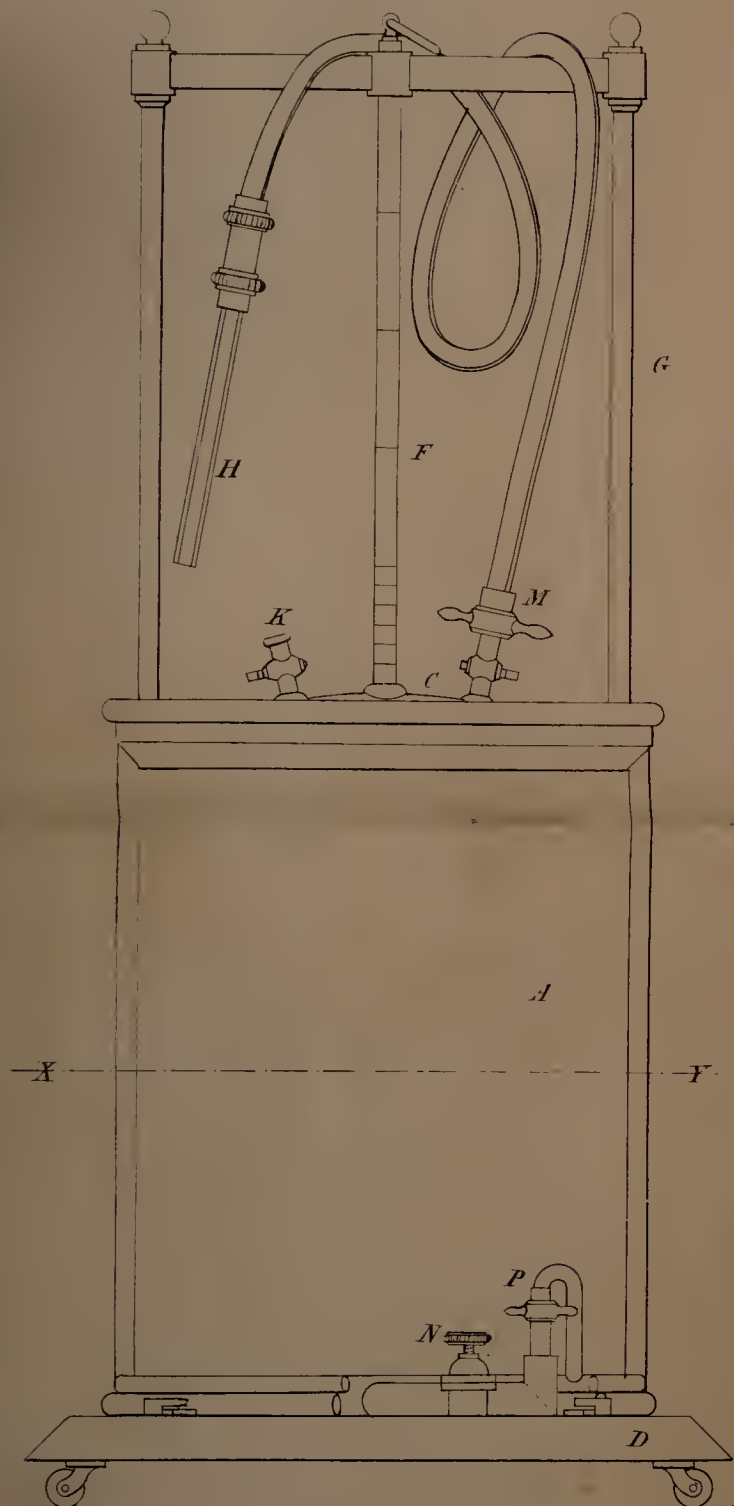


Fig. 2.

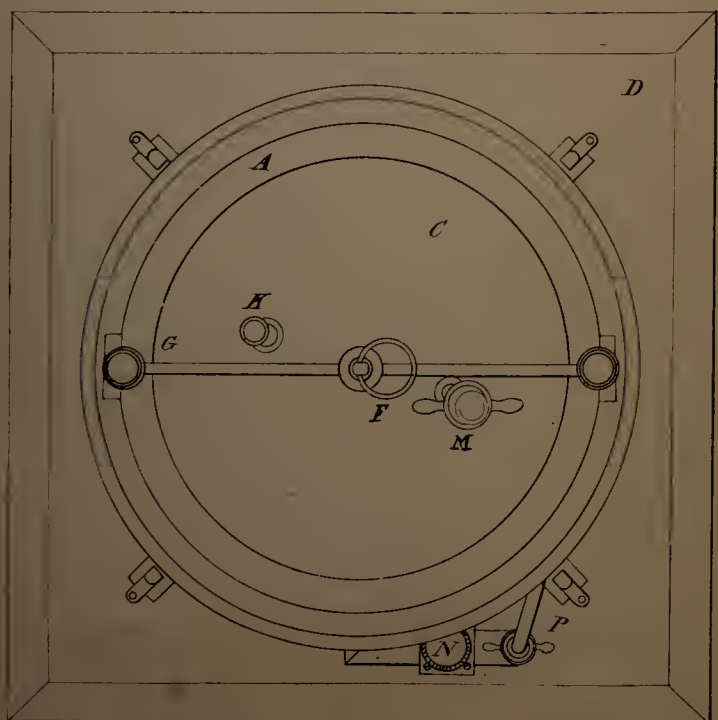


Fig. 3.

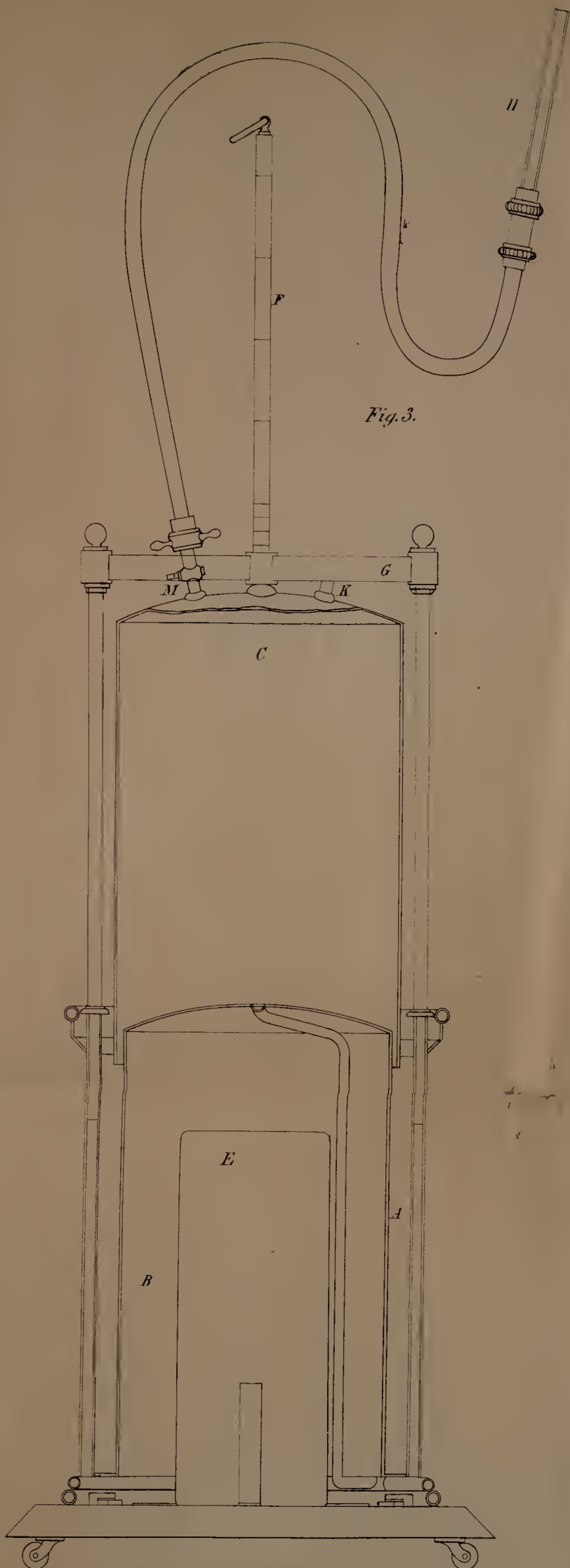
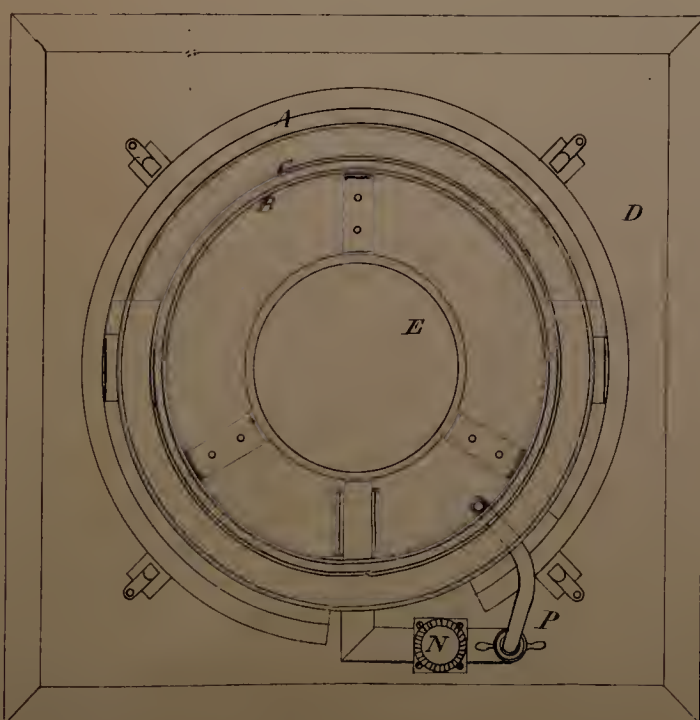


Fig. 4.



Section thro. XY

